

Boscombe Directional WaveRider Buoy

Location

OS: 411413E 90302N
 WGS84: Latitude: 50° 42.681'N Longitude: 001° 50.376'W

Water Depth

10.4m CD

Instrument Type

Datawell Directional WaveRider Buoy Mk III

Data Quality

C1(%)	Sample interval
98	30 minutes

Monthly Means

All times GMT

Month	H _s	T _p	T _z	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	0.66	8.2	4.2	168	6.8	27
February	0.52	9.4	4.3	173	6.0	28
March	0.74	7.7	4.0	171	5.9	31
April	0.40	5.5	3.6	181	8.9	30
May	0.54	6.2	3.7	184	11.9	31
June	0.31	5.0	3.3	172	15.8	30
July	0.34	5.1	3.4	179	13.0	31
August	0.36	5.0	3.4	184	19.1	27
September	0.53	7.8	3.9	181	18.4	29
October	0.75	5.7	3.7	176	16.4	31
November	0.80	6.7	4.0	180	13.4	30
December	0.91	8.3	4.3	181	10.9	31

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2006									
Date/Time	H _s	T _p	T _z	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
29-Dec-2006 23:00	3.14	7.7	5.8	177	-0.09	HW + 6	0.7	0.34	0.37
03-Dec-2006 06:30	3.09	7.7	5.5	186	1.35	HW - 3	1.1	0.64	0.85
07-Dec-2006 02:30	2.60	8.3	5.4	191	0.91	HW + 5	0.9	0.55	0.57
17-Nov-2006 13:30	2.51	7.7	5.3	187	0.06	HW + 6	0.4	0.26	0.47

* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge on Bournemouth Pier). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.

Year							Annual H_s exceedance* (m)	Annual Maximum H_s
	0.05%	0.5%	1%	2%	5%	10%	Date	A_{max} (m)
2003	2.74	2.17	1.95	1.53	1.19	0.98	14-Nov-2003 11:00	2.79
2004	2.98	2.28	1.96	1.69	1.30	1.02	08-Jan-2004 09:30	3.62
2005	2.62	1.81	1.59	1.40	1.11	0.90	02-Nov-2005 01:00	2.84
2006	2.81	2.23	2.03	1.80	1.46	1.16	29-Dec-2006 23:00	3.14

* i.e. 5 % of the H_s values measured in 2003 exceeded 1.19m

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

- Percentage of occurrence of H_s , T_p , T_z and Direction for 2006
- Percentage wave height exceedance (all recorded years) – note that the statistics for 2003 were based on measurements from July to December only
- Joint distribution of all parameters for 2006, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storm waves for 2006 and for all previous years. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown. Note that the buoy was not deployed during the late autumn storms – see below.
- Annual time series of H_s (red line is storm waves threshold)

General

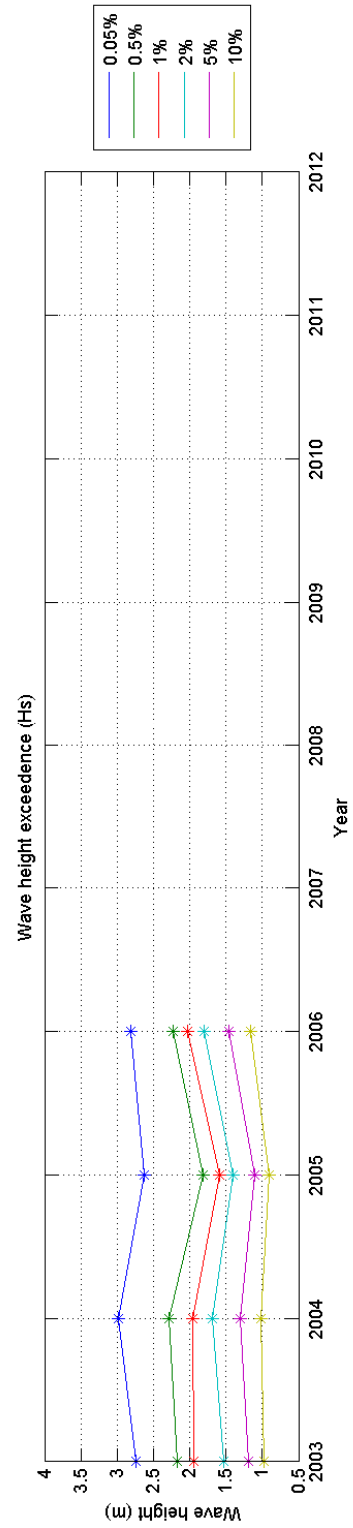
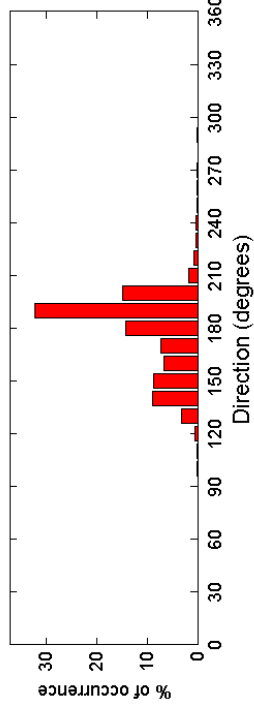
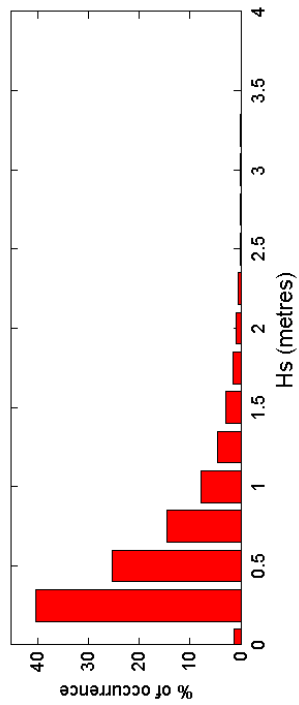
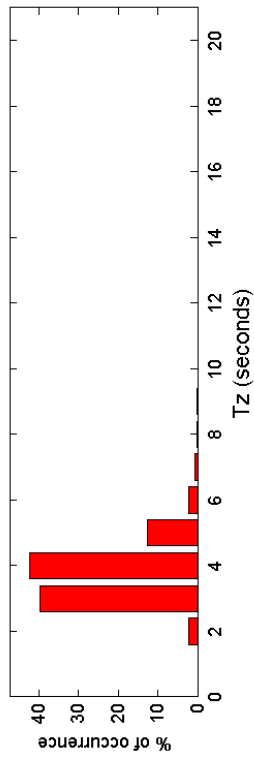
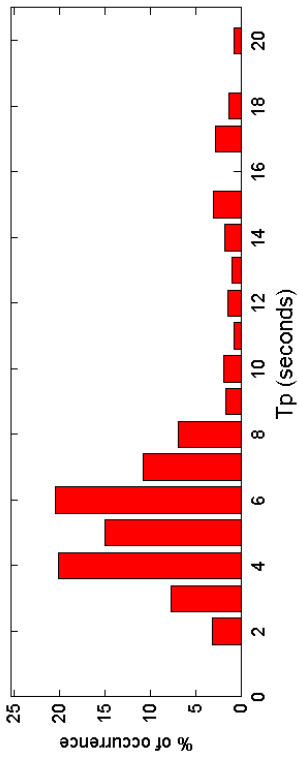
The wave directions recorded by the Datawell Directional WaveRider Mk III were found to be contaminated by a significant tidal signature, compounded by the on-board data processing. The buoy received new electronics to fix this problem in February 2004; wave directions measured before March 2004 were excluded from the analysis.

The buoy was badly damaged in November 2005, just prior to the series of storms which occurred that month. The buoy was replaced in December 2005.

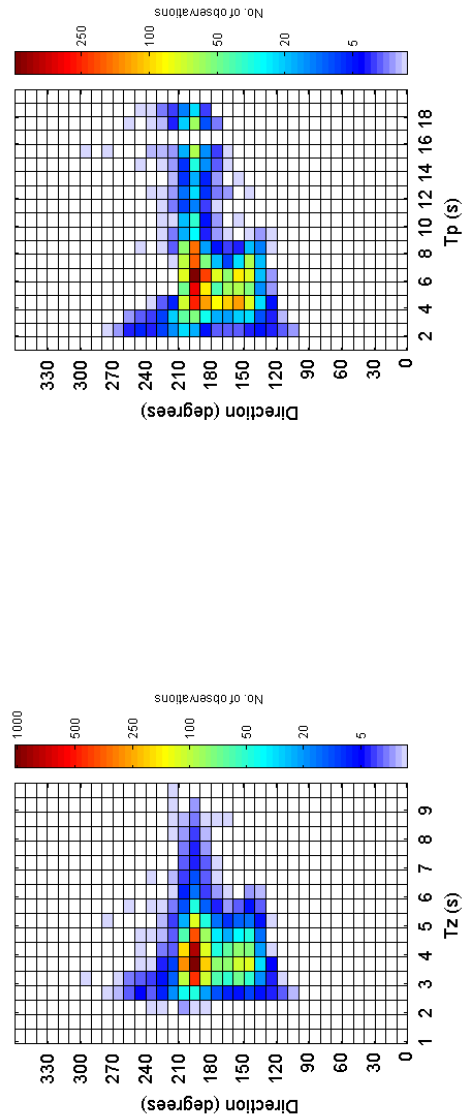
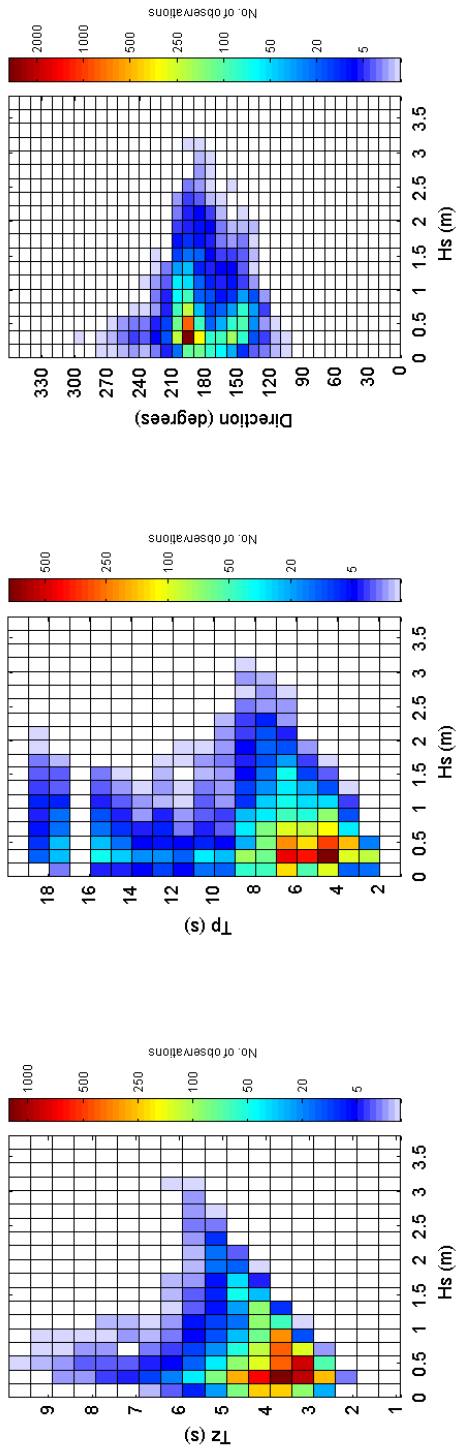
Acknowledgements

Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

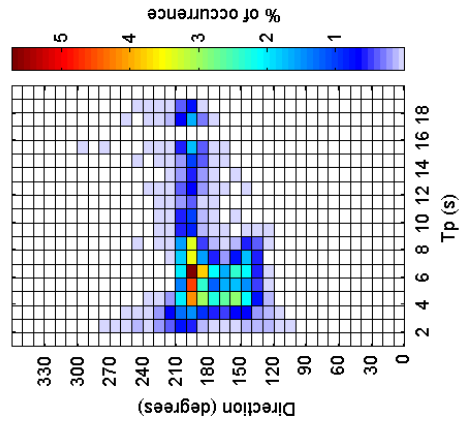
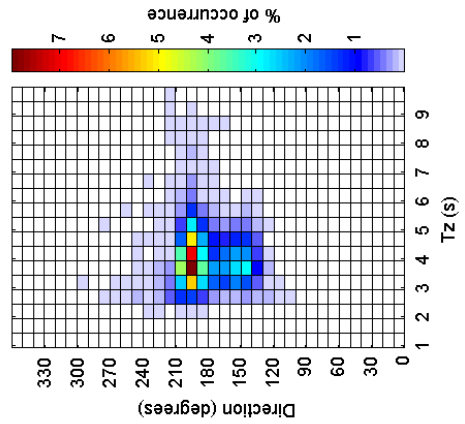
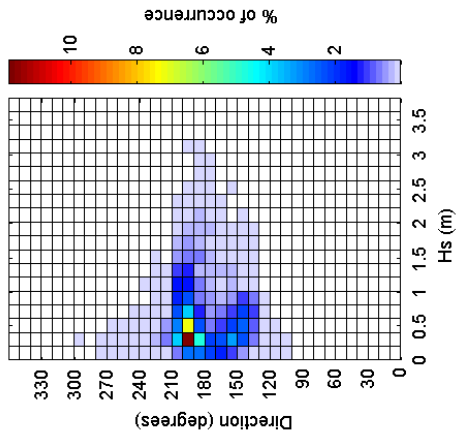
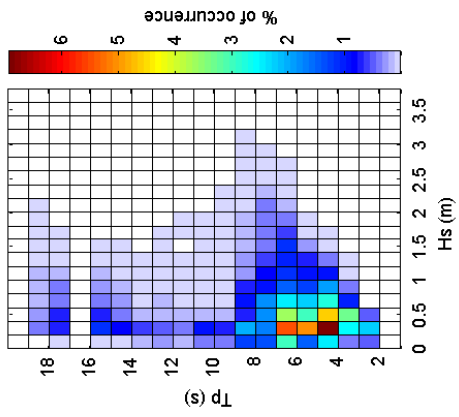
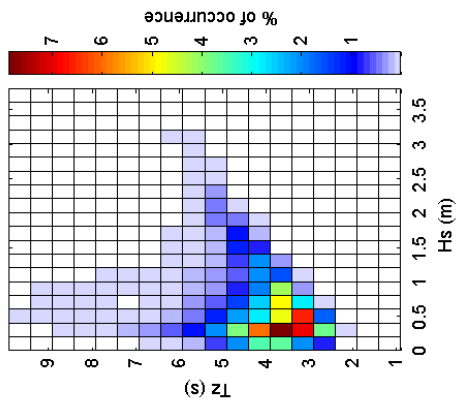
Boscombe 2006



Boscombe 2006 - Joint distribution



Boscombe 2006 - Joint distribution (% of occurrence)



Boscombe 2003 to 2006 - Joint distribution (% of occurrence)

